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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09-688,039	10-11-2000	Yukihisa Takeuchi	939_014	5550

25191 7590 02-19-2002

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EXAMINER

AMIN, ANAND B

ART UNIT	PAPER NUMBER
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2829

DATE MAILED: 02/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/688,039

Applicant(s)

TAKEUCHI ET AL

Examiner

Anand B Amin

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10-11-00 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: An element "1" does not disclose in figure 1. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Objection to claim

4. Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 2 further limits an absolute value in which a piezoelectric/electrostrictive element is provided in the absolute value calculating element rather than just absolute value calculating element of claim 1.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Weiss (U.S. 5,594,240).

Regarding claim 1, Weiss discloses, electrostrictive elements (see abstract, figure 4, element 40) and a detecting means (strain gauge-sensor-40) for detecting an amount of deformation (see figure 1,5-6) thereof, wherein an alternating-current signal is calculated into an absolute value and output by impressing the alternating signal to the electrostrictive elements (column 5, line 40-45, element 40) for deforming the same and by converting a distortion of the electrostrictive elements into an electric signal (column 4, line 35-40) by using the detecting means.

Regarding claim 2, Weiss discloses deformed in proportion to the amount of deformation of the electrostrictive elements (see figure 1,5-6 and abstract), wherein an alternating-current signal is calculated into an absolute value and output by impressing the alternating signal to the electrostrictive element for deforming the same and by outputting electromotive force generated by the deformation of the piezoelectric/electrostrictive element.

Regarding to claim 3, Weiss discloses wherein the electrostrictive elements and the piezoelectric/electrostrictive elements (see figures 2, 4, element 5 and 10,40

Art Unit: 2829

and 45 respectively) are overlapped and pinched between a rigid body that is not deformed (column 6, line 52-65).

Regarding claim 4, Weiss discloses wherein one end of the electrostrictive elements in a deforming direction (see figure 2, shown by arrow) thereof is fixed while the other end of the electrostrictive element is fixedly attached to one surface of an elastic plate body (element 10), which one end is fixed and its other end is formed as a free end, and a platelike piezoelectric/electrostrictive element is fixedly attached to the other surface of the elastic plate body (element 5).

Regarding claim 5, Weiss discloses wherein the electrostrictive elements and the piezoelectric/electrostrictive element are formed to assume a plate-like shape (see figures 2,4), wherein the electrostrictive elements are fixedly attached to one surface of the plate-like elastic plate body while the piezoelectric/electrostrictive element is fixedly attached to the an opposing surface of the plate-like elastic body.

Other prior art cited

6. The prior art made of record and not relied upon is considered pertain to applicant's disclosure.

Noel et al. U.S. Patent 4,912,355 discloses superlattice strain gage.

Hagood, IV et al. U.S. Patent 5,869,189 discloses composites for structural control.

Takeuchi et al. U.S. Patent 5,889,353 discloses piezoelectric/electrostrictive film element with a diaphragm having at least one stress releasing end section.

Art Unit: 2829

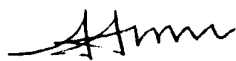
Wandass et al. U.S. Patent 5103,174 discloses magnetic field sensor and device for determining the magnetostriction of a material based on a tunneling tip detector and methods of using same.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anand B Amin whose telephone number is 703-308-4931. The examiner can normally be reached on 8:00 A.m. to 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 703-308-1680. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3431 for regular communications and 703-305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.



Anand B. Amin

Examiner

Art Unit 2829

February 8, 2002

